



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/092,349	03/07/2002	Hyun-Suk Yang	SEC.919	7717

7590 04/13/2004

VOLENTINE FRANCOS, PLLC
SUITE 150
12200 SUNRISE VALLEY DRIVE
RESTON, VA 20191

EXAMINER

BRAHAN, THOMAS J

ART UNIT	PAPER NUMBER
----------	--------------

3652

DATE MAILED: 04/13/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/092,349

Applicant(s)

YANG, HYUN-SUK

Examiner

Thomas J. Brahan

Art Unit

3652

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 December 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Art Unit: 3652

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 3, 4, and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakahara et al in view of Swanson et al. Nakahara et al shows a reticle transfer and storage system, comprising:

a reticle library (1);

a plurality of reticle cassettes (2) stored in the reticle library (1);

a fork arm (3) disposed adjacent the cassettes, fork arm (3) comprising a base and a plurality of tines for supporting a reticle, each of the tines having a base end at which the tine is integral with and extends from the base, and a distal end remote from the base end, and the fork arm (3) being moved horizontally and vertically in a working range that encompasses the interior of each of the cassettes so as to be capable of withdrawing a reticle stored in any of the cassettes; and

a linear carrier (4) disposed outside of the library (1) and movable to a position within the working range of the fork arm (3).

Nakahara et al varies from the claims by not having sensors for detecting the presence of a reticle at various positions with respect to the fork arm. Swanson et al shows a similar transfer system with linear arrays of optical sensors (700) on the end effector (106). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the transfer system of Nakahara et al by providing the tines of the fork arm (3) with sensors, as taught by Swanson et al. The optical sensors of Swanson et al are considered as photo sensors, as recited in claims 3 and 6, alternatively, it would have been an obvious design expedient, within the level of routine skill in the art to use photo sensors in the sensor arrays of Swanson et al.

3. Claims 1 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakahara et al in view of Genov. Nakahara et al shows a reticle transfer and storage system, comprising:

a reticle library (1);

a plurality of reticle cassettes (2) stored in the reticle library (1);

a fork arm (3) disposed adjacent the cassettes, fork arm (3) comprising a base and a plurality of tines for supporting a reticle, each of the tines having a base end at which the tine is integral with and extends from the base, and a distal end remote from the base end, and the fork arm (3) being moved horizontally and vertically in a working range that encompasses the interior of each of the cassettes so as to be capable of withdrawing a reticle stored in any of the cassettes; and

Art Unit: 3652

a linear carrier (4) disposed outside of the library (1) and movable to a position within the working range of the fork arm (3).

Nakahara et al varies from the claims by not having sensors for detecting the presence of a reticle at various positions with respect to the fork arm. Genov shows a similar transfer system with photo sensors (72a-72c) on the base ends of the tines of the end effector (70). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the transfer system of Nakahara et al by providing the base ends of the tines of the fork arm (3) with photo sensors, as taught by Genov.

4. Claims 2 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakahara et al in view of Swanson et al, as applied above to claims 1 and 4, and further in view of Johanson et al or Holbrooks. Nakahara et al, as modified, shows the basic claimed reticle transfer system, but varies from claims 2 and 5 by not have an alarm generating a signal when the reticle is out of position. Johanson et al shows a similar sensor system which generates an alarm signal to alert the control system or the operator if the wafer coordinates differ within a given range, see column 13, lines 9-11. Holbrooks shows a similar system which generates alarms and other data to indicate the output of the data, see column 10, lines 28-32. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the reticle transfer system of Nakahara et al by providing it with an alarm system, to notify the operator or the system when the sensors determine that the reticles are out of position, as taught by Johanson et al or as taught by Holbrooks.

5. Claims 2 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakahara et al in view of Genov, as applied above to claims 1 and 4, and further in view of Johanson et al or Holbrooks. Nakahara et al, as modified, shows the basic claimed reticle transfer system, but varies from claims 2 and 5 by not have an alarm generating a signal when the reticle is out of position. Johanson et al shows a similar sensor system which generates an alarm signal to alert the control system or the operator if the wafer coordinates differ within a given range, see column 13, lines 9-11. Holbrooks shows a similar system which generates alarms and other data to indicate the output of the data, see column 10, lines 28-32. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the reticle transfer system of Nakahara et al by providing it with an alarm system, to notify the operator or the system when the sensors determine that the reticles are out of position, as taught by Johanson et al or as taught by Holbrooks.

6. Claims 3 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakahara et al in view of Genov, as applied above to claims 1 and 4, and further in view of Swanson et al. Nakahara et al, as modified, shows the basic claimed reticle transfer system with an array of sensors at the bases of the tines, but varies from claims 3 and 6 by not having plural sensors at the base of each tine. Swanson et al shows a similar sensor system with an array of sensors (700) at the base of each tine. It would have been obvious to one of ordinary skill in the

Art Unit: 3652


art at the time the invention was made to modify the sensor system at the times of Nakahara et al by using an array of sensors at the base of each tine, for increased accuracy, as taught by Swanson et al.

7. Gibson et al is cited as a divisional of the Swanson et al reference describing the sensor arrays (700) slightly differently. Hine et al and Bacchi et al show end effectors with sensors.

8. Applicant's remarks in the amendment filed December 18, 2003 have been considered, but are deemed moot in view of the above new rejections. The amendment necessitated the new grounds of rejection presented in this Office action. Accordingly, THIS ACTION IS MADE FINAL. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

9. An inquiry concerning this communication should be directed to Thomas J. Brahan at telephone number (703) 308-2568. The examiner's supervisor, Ms. Eileen Lillis, can be reached at (703) 308-3248. The fax number for all patent applications is (703) 872-9306.


Thomas J. Brahan
Primary Examiner
Art Unit 3652